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The Care of the National Forest-reservations.

CONGRESS has an important duty to perform in providing proper machinery for the administration and protection of the great forest-reservations which the President of the United States has established in different western states and territories. These reservations aggregate several millions of acres; they are covered with forests which protect mountain-slopes and insure the continuous flow of several important streams. They are valuable, too, in a greater or less degree, as sources of timber-supply, and it is clear the Government should protect them from the injuries and possible destruction which threaten all our western forests.

These great reservations are now reservations only in name. Proclamations from the President of the United States prohibit the sale of the land to settlers, but leave them without adequate protection. The shepherds of California still pasture their sheep within the boundaries of national reservations; fires are practically unchecked, and men grow rich by selling timber cut from land dedicated to public use. Under existing conditions this is inevitable. A thousand square miles of broken forest-country, crossed by numerous mountain-ranges, are difficult to guard, especially when the guards are selected from the very population most directly interested in the destruction of the forest. In those rare instances, when the malefactors are brought to justice they are sure to escape judgment at the hands of jurors selected from among their friends and neighbors. In all the western country the value of forest-property is not great in popular estimation, and the conviction of trespass upon such property is difficult to obtain. The problem of protection presents many serious obstacles, but, unless they can be overcome, it would be better for the Government to restore these lands to sale and entry than to continue to hold them as reservations, which, by encouraging theft and trespass, debauch public morality without effecting the only purpose for which such reservations are useful. They must be protected, as far as it is possible to do so, from fire, the most active agent in forest-destruction; they must be guarded from browsing animals, which, for years, have been sapping the life of some of the noblest forests of the continent; and they must be made to furnish the actual inhabitants of the regions in which they are situated with regular and abundant supplies of timber and fencing material cut under proper restrictions and paid for at fair prices.

These results can be obtained, difficult as they now appear, if the reservations can be entirely removed from politics; this can probably only be done by transferring their care from the control of the Secretary of the Interior to that of the Secretary of War. At the present time there is no body or organization of men in the United States but the army capable of dealing with problems of this magnitude and difficulty; and as it is the army which must be called on to furnish protection whenever the danger becomes imminent, it is only right that the Secretary of War should determine in what manner and to what extent this protection should be afforded. The agents of the Department of the Interior have neither the ability nor training nor the organization needed for the task; they are usually selected from among the inhabitants of regions adjacent to the property entrusted to their care; their local sympathies are with the trespassers, and, even with a sincere desire to perform their duties, their lack of organization makes them powerless. Once in the hands of the Secretary of War, a system of protection would not be difficult to organize. Well-educated army officers we have already in abundance, and their commands might be recruited for this special service from among men who are accustomed to a forest-life, and who, if they were brought from other parts of the country, would not be influenced by local sympathies. The effectiveness of such a corps of forest-rangers would be, of course, greatly increased if some primary instruction in forestry could be added to the curriculum of the Academy at West Point. Fixed ideas upon the value of forests and upon forest-protection would increase the value of the service. A technical forest-education, in the German or French sense, would not be required; the time for that has not come yet in the United States. The existing timber-supply of the country is still so great that it will not pay now to expend the labor in rearing forests which in many other lands returns handsome profits upon the outlay. But the officer who is to protect one of our national reservations should be able to teach his subordinates why browsing animals injure the forest, why certain trees should be cut and why others should be left standing; he should know something of the qualities of the different species of trees in order to be able to protect advantageously the most valuable at the expense of the least desirable varieties. Such a knowledge, too, is important because it brings with it enthusiasm and real interest in the work of forest-protection which might otherwise be looked upon as a meaningless and dreary task.

The value of the army in protecting our forests has already been demonstrated. For a number of years a small squad of cavalry has preserved order and protected property in the Yellowstone National Park; in California the army has performed similar service in different reservations, although the smallness of the available force and some conflict of authority between the departments has curtailed its usefulness there. A handful of soldiers is worth a hundred civilians for such work, for the presence of the uniform inspires a respect which is felt far beyond the limits of the region actually patrolled. A company of picked men, well officered and well mounted, would be sufficient to guard the largest of our reservations from the inroads of shepherds and unauthorized timber-cutters, and would be able to diminish the number and ravages of forest-fires.

The transfer of the reservations from one department of the Government to another, the addition of some simple instruction in forestry to the West Point curriculum, and the enlistment of a special corps of forest-guardians to be commanded by officers of the army, seem to afford a cheap,

quick and practical solution of the problem. The fact that this scheme might be put into almost immediate operation is a strong argument in its favor. Speedy action is essential, for every year witnesses serious encroachment upon the forests and increases the demoralization of the people of the western states and territories, in so far as concerns their appreciation of the rights of the Government to protect its forest-property.

A better plan, perhaps, can be suggested to accomplish the purpose. It is a subject which requires the most careful consideration and the fullest possible discussion; and the Government, before it can take any action, will require, and should seek, the advice of the wisest counselors it is able to command.

From an article upon the American Ginseng, Aralia quinquefolia, published in the April and May issue of the Kew *Bulletin of Miscellaneous Information*, it appears that the Legislative Assembly of the Province of Ontario has enacted that "except for the purpose of clearing or bringing land into cultivation, no person shall, between the first day of January and the first day of September in any year, cut, root up, gather or destroy the plant known by the name of Ginseng, whenever such plant may be found growing in a wild or uncultivated state." The penalty for disobeying this act is not less than five dollars, or more than twenty dollars, with the costs of prosecution, one-half the penalty being paid to the prosecutor. Such a law might wisely be enacted and enforced in all the states of the Union where the Ginseng-plant abounds, and where its utter extermination to supply the demands of the large Chinese trade is imminent.

The Ginseng, which was first made known to Europeans through plants which Kœmpfer had found cultivated by the Japanese, who for centuries have exported the roots to China, was first discovered in the New World in Canada, near Montreal, in 1716, by the Jesuit missionary Lafitau, who two years later published a description of it in Paris. The French soon engaged in collecting and exporting the roots to China, this trade giving a considerable impulse to the commerce of Montreal for a number of years. "At one time," we learn from Bulletin lxv. of the Experiment Station of the Ontario Agricultural College that "great numbers of Indians were engaged in gathering it about Montreal and Quebec, and large quantities of it were sent to China. In 1832 shipments of Ginseng from the United States amounted to 407,067 pounds, valued at $99,303. In one county in Wisconsin the trade is reported to have reached, in 1848, $40,000. Immense quantities have been exported from Minnesota. At present the chief sources of the plant in the United States are Ohio, West Virginia and Minnesota. About the close of the eighteenth century it was discovered also in Massachusetts, and its exportation produced large returns."

It is stated in the same bulletin that in 1890 Ginseng representing a value of $100,000 was sent from Canada, the price realized for dried roots being from $3.00 to $3.50 a pound. Last year Mr. Stanton discussed in our columns (vol. v., p. 223) the possibility of cultivating Ginseng, which seems destined to become an important and profitable farm crop in some parts of the country, as it has been for centuries in Japan, and in Corea, where the greatest attention is paid to producing the roots, for which the Chinese demand seems inexhaustible.

Economy in Decoration.

The illustration on page 355 of a group of Daisies and Grasses calls attention to the fact that the ornaments of our drawing-rooms need not be expensive to be charming, and that a handful of blossoms gathered by the way-side, if arranged with skill and taste, may be as artistic as a vase of priceless orchids.

It is too generally the custom to esteem a flower for its money value or for its rarity, without reference to its own merit of hue or form or graceful habit of growth. Although cultivation achieves wonderful results, we have but to look about us to realize that Nature, unassisted, constantly achieves masterpieces of delicacy and beauty, scattering her fine designs abroad with so reckless a prodigality that we cease to estimate them at their proper value until the hand of the artist emphasizes their worth and reveals it to our duller vision. This artistic recognition has made of the Lotus and the Acanthus, both wild growths, the basis of two splendid architectures. It has woven the volutes of the Vine into a third, and in the Gothic age has made every leaf and blossom bear tribute to the sculptor, and has stiffened the forest aisles into stone. To-day there lie about us, on every hand, beauties which need but the seeing eye to incorporate them in novel and permanent forms.

We live in an age of echoes and few dare to leave the well-known airs to seek new harmonies. When such departures occur, the results are often grotesque rather than beautiful, and we relapse again into the restraint of precedent, so that our architecture, our sculpture, our painting as well as our floral decorations are at best but copies of the vigorous conceptions of a simpler age, which at least possessed the gift of summarizing. For, after all, the essence of the highest art, as of the highest living, is wise economy, which, artistically interpreted, means the expression of high conception by simple means. Expensive detail may but weaken the massiveness of a result, as a landscape-garden may be spoiled by its shrubs and flowers, a fine prospect belittled by a confused foreground, a picture ruined by the spottiness of overwork.

Few people know that large rooms may often be profitably ornamented with great forest boughs. The exquisite green of the leaves harmonizes agreeably with any background, while their delicately cut forms throw charming shadows on wall or screen. About such ornamentation there is a refinement and restraint that appeal to the artistic eye, for the leaf is the broad expression of the flower, and in the serrated curve of the foliage of the Beech, in the sharp indentations of that of the Oak and Maple, in the attenuated grace of the Willow branch are found the charm of the petal without its color, but with its varying outline, its waving edge, its clustered heart. Nor, indeed, can we say that the leaf lacks variety of hue, since there is from the yellow of Chestnut and English Walnut and the deep blue of Spruce, a whole gamut of color to the dark autumnal red of Oak and Maple; a gamut on a lower key than that of flowers, but as distinct and beautiful, and even more restful.

The decorative value of the Ox-eye Daisy, interspersed with the herbage which naturally surrounds it, is generally acknowledged and appreciated. The golden heart circled by inner rays gives a peculiar brilliancy to a group of these flowers, while the formal symmetry of their outline is agreeably contrasted with the sweeping curves of Grass leaves and the gray-green fluffiness of its blossoms. Such an ornament is within reach of every one, and is as appropriate to a drawing-room as to an attic-chamber. It may adorn a Japanese vase, or conceal the ugliness of a broken pitcher, and be in itself always refined and elegant.

There are other ornaments of the fields and highways that form charming decorations. The blue of the Succory, with its scraggy stems concealed by the foliage of a neighboring bush, has a beautiful note of color. The Rudbeckia, with its golden rays and rich dark red heart, is always effective, and the Fire Lily, on its slender stem, adapts itself to all sorts of artistic uses. Most delightful compositions for winter use can be made of the blossoms of the Golden-rod interspersed with brown frost-touched leaves and Thistle-balls, while the little group of leaves which springs from the root of the shorn Mullein, if gathered late, turns white, and produces the effect of a velvet camellia.

The value of the grays and browns of a field in late autumn to furnish material for vases is surprising. The Golden-rod will preserve its color all winter if gathered before the frost touches it, and a few red berrries of the Black Alder will still further enliven the bouquet. The frost is an exquisite painter, and furnishes a scale of grays to delight the heart of the most sensitive artist. In the spring there are the nodding scarlet Columbine, the shrinking Wind-flower trembling on its stem, the burst of blossom on the tree-tips, the red of Maple-bloom, the golden green of Alder and Willow tassels, the rich yellow of the Chestnut at a later season. Nature plants a parterre for man everywhere, so that his home need never lack an ornament if he but have eyes to see and hand to cull the ever-ready decoration. Even in snow-clad winter, a Fern-like branch of Hemlock against a white wall is full of delicate beauty, while a sprig of Holly, or a glossy group of Laurel-leaves, will bring with it a memory of the green wood in whose shelter it grew.

To the true lover of nature the beautiful simplicity of natural growths appeals with a suggestiveness of reminiscence that is often wanting in the costlier occupant of the greenhouse or flower-garden. It is the difference between a curio and a household relic, one rare and lovely and precious, but the other endeared by tenderest memories. To the child the delight of hunting for the chary wild flower far exceeds any riot in the well-kept garden, while the boy's nutting expeditions are much more to his mind than the plucking of fruit in the richest orchard. In after life all that recalls these lost delights is dear to the man's heart, and has its own intimate and suggestive charm. A lesson in economy comes scarcely amiss in these troubled days, and since it is luxuries that must go first when it is a question of giving up something, it is well to know that the living-rooms need not suffer so long as there are woods and fields to draw upon for their floral decoration, while the exchange for tasteful simplicity is really a distinct gain, contrasted with the wasteful and inordinate use of flowers with too lavish and expensive profusion.

Horticulture in Belgium.

WITH the permission of the First Commissioner of Her Majesty's Works and Public Buildings, the Curator of the Royal Gardens, Mr. George Nicholson, A. L. S., was sent to Belgium for the purpose of attending the Thirteenth International Quinquennial Horticultural Exhibition at Ghent (April 16–23), and of visiting the more important horticultural establishments. The following notes from the *Kew Bulletin* give his impressions of the present position of gardening enterprise in Belgium :

Belgium is a great horticultural country, and Ghent itself one of the busiest and most important centres of gardening on the continent. Nurseries, many of them of very considerable extent, exist by the hundred in its immediate neighborhood. Owing to various causes, cheap glass, cheap labor, etc., many plants are grown for trade purposes on an enormous scale and exported to other European countries at a less price than they could be grown by the persons who import them. Azaleas are a case in point. That splendid specimen of Azaleas can be grown in this country is evident enough to any one familiar with our great flower-shows, but that beautiful bushy market plants can be produced in the same time and at the same cost as those exported from Belgium is, I believe, impossible. The continental summer allows these to be planted out in beds in the open air, and causes the wood to be thoroughly ripened and the buds to set in a way which cannot obtain with us, except in exceptionally favorable seasons. On the other hand, our moister, cooler summers enable English gardeners to surpass their continental colleagues with such plants as Nepenthes, Ferns, Heaths and many hard-wooded plants.

Fashion in horticulture changes in a somewhat arbitrary way, and no one can escape this conclusion by even reading the reports of the exhibitions of less than twenty years ago and those of to-day. Then new plants and collections were much valued, and nurserymen kept for sale large collections of stove and greenhouse plants which now are hardly to be found outside a botanic garden. Even Camellias, which less than a generation ago were very extensively grown about Ghent, are now not to be seen in some establishments where once they were the principal stock in trade; apparently the difficulty in arranging the cut flowers and the impracticability of cutting largely from the plants is the cause of the disfavor into which they have fallen. New plants, too, in the sense of collections of species, are almost ignored in many places, and, instead, enormous numbers of ornamental foliage and flowering plants, belonging sometimes to not more than a score of species, and often fewer still, are now to be seen.

The International Quinquennial Exhibition is the thirteenth of the series and the 159th flower-show—organized by La Société Royale d'Agriculture et de Botanique of Ghent. The society was first formed in 1808, and its first exhibition was held in a room of a small inn in 1809, about one hundred yards from the site of its present quarters; a reproduction of this first exhibition as regards the room, etc., and as far as possible the species and varieties of plants, was one of the most interesting features of the quinquennial of 1888.

From 1837, exhibitions were held in a large permanent building, but in 1878 temporary structures more vast each succeeding 'quinquennial' were built in the grounds. This year one structure, admirably built, designed by Monsieur Ed. Pynaert, covered a space of more than 2,500 square metres; and arrangements for heating were made so that, had the weather proved cold, the plants contained in it would have been perfectly safe.

Subsidies from the Belgian Government, the Province, the town of Ghent and the subscriptions of the members of the society furnish the large sum of money necessary to carry out an exhibition on so vast a scale. No entry fees are paid by exhibitors, and the society makes arrangements with the railway and steamship companies for low freight charges. This year the entries were more numerous than ever; some even were refused for want of space, and some groups of plants, which otherwise would have been under cover, were placed for effective masses in the open garden. The jury, consisting of 184 members, belonging to fifteen nationalties, including Russia, Brazil and Japan, divided into sections, had to judge about 660 classes.

The great hall, a glass-roofed structure, with an area of 2,200 square metres, was so arranged as to produce a wonderfully fine effect. Large Palms, Tree Ferns, etc., were massed irregularly round outer walls and at the foot of the double staircase leading to the upper rooms of the Casino. A main curving walk went round the building in front of these tall banks of foliage. Eight masses of dwarfer-growing plants were arranged in the centre of the hall, with a broad central walk and shorter ones leading into the main arteries.

The Palms were especially well grown, large specimens in splendid health, in small tubs and pots. Careful attention to watering, and especially in the application of liquid manure, enables the growers to produce beautiful specimens of great size, which can be moved about with comparative ease. Some years ago collections of Palms were grown for sale by some of the principal Belgian nurserymen; now house after house of a single species, or of a very few of those best adapted for decorative work, are to be met with, and the rarer kinds of less value from a 'furnishing' point of view have almost entirely disappeared. Kentia, Phœnix, Cocos and Livistonia are the genera now most frequently represented in nurseries, but in the exhibition a number of fine specimens of Washingtonia and Erythea (imported from the Riviera), Thrinax, Sabal, Rhapis, Pritchardia, Seaforthia, etc., were to be seen.

In the centre of the great hall, huge specimen Azaleas were so thickly covered with flowers as to hide the leaves. Although in shape the plants were extremely formal, they showed exceptional skill in cultivation. There must have been considerable trouble taken in 'keeping back' plants which, under any ordinary conditions in such a season as the present, would have been quite out of flower before the exhibition opened. We heard of one exhibitor placing blocks of ice in his Azalea house in order to keep down the temperature. Careful shading—in some cases moving plants into dark sheds, etc.—was also resorted to. Some of the Aroids exhibited were exceptionally fine; a grander lot of Anthurium Scherzerianum than that exhibited by Monsieur G. Warocqué was probably never before seen; the specimens were very large, healthy and with extraordinary large inflorescences. The ornamental-foliage Aroids were also well represented; these plants are more widely grown as stove decorative plants in Belgium and other continental countries than in Britain. Ferns, with the exception of Tree Ferns, which were well shown, were not remarkable; much better groups, as regards cultivation and variety, are to be seen at any of the large London shows.

Cycads were good and attracted much attention, but they were decidedly inferior, for instance, to those in cultivation in the Palm-house at Kew. Fine plants of Caladiums were exhibited in great variety by Monsieur Louis Van Houtte.

The Norfolk Island Pine, Araucaria excelsa, and a number of garden varieties of it were exhibited in the most perfect condition; in and around Ghent whole series of houses in many establishments are devoted to the cultivation of this conifer. It is one of the most popular plants for table and conservatory decoration.

In the central hall of the rotunda were exhibited two very wonderful groups of Orchids containing many rare, choice and valuable varieties of well-known species, and not a few well-grown plants of rare species, beautifully flowered. The two exhibitors were Messieurs J. Hye and G. Warocqué, both Belgian amateurs.

A collection said to contain 228 distinct species, many of them uncommon, was exhibited by Monsieur Alfred Van Imschoot; among them was a Vanilla in fruit.

Both at the exhibition and in many of the nurseries visited the English visitor could not help being struck by the health and vigor of Cattleyas, Odontoglossums, Miltonias and other Orchids. Whether the extreme vigor of the plants conduces to longevity (many Orchids are short-lived under cultivation) is a question which many would like to see definitely settled.

As a rule, a much higher temperature is maintained in the houses than is considered good for the same species under cultivation in English Orchid-houses.

Canvas is not used in Belgium as a shading material, but thin laths or bamboo strips wired together, and drawn up or let down by means of rollers, as are the canvas blinds in England. As a consequence, during sunlight, the Orchid-leaves are barred transversely with bands of light and shade, quite different from the more diffused light caused by canvas. I cannot but think that this may have something to do with the success which attends the cultivation of Cattleyas, Odontoglossums, etc., in Belgium.

No thrips or other insect pest infested any of the numerous sets of plants seen. On inquiry this was attributed to a layer of the midribs of tobacco-leaves placed on the hot-water pipes; fumigation was not resorted to.

The Hippeastrums shown by Messrs. James Veitch & Sons, Chelsea, were remarkably fine; much better than those of any other exhibitor. The Nepenthes exhibited by Monsieur Alexis Dallière, of Ghent, were much inferior to the plants we are accustomed to see in English gardens. In spite of the season—all Hyacinths grown in the open air had long been past—one room was resplendent with remarkably fine pot Hyacinths contributed by several Dutch growers.

The new Bertolonias exhibited by Van Houtte attracted much attention; it is impossible to describe the delicacy as well as the brilliancy of their foliage.

Saintpaulia ionantha, a Gesneraceous plant with a rosette of radical leaves and short scapes, bearing deep violet-blue, yellow-anthered flowers, was one of the prettiest, as well as one of the most interesting, new plants exhibited. Seeds of it were sent home by the German officer in whose honor it has been named, from the mountains of eastern tropical Africa. In general aspect the plant resembles Ramondia Pyrenaica.

In British gardens Bromeliads have not yet acquired the position to which they are entitled as ornamental plants; many of them are very handsome, and their strangely marbled leaves and brilliantly colored inflorescences, which often last a long time, make them popular on the Continent for decorative purposes. Many thousands of one species alone—beautifully grown plants—were seen in the Royal Gardens at Laeken, where Mr. Knight uses them with great effect. At the exhibition were to be seen many fine hybrids; some of the best were those shown by Monsieur Duval, of Versailles, under the names of Vriesea tessellata, splendens, and its varieties, major and minor. Other very fine Bromeliads were exhibited by the Botanic Garden at Liège, for so many years famous for its collections of this family of plants, by Messieurs Jacob Makoy & Co. and by Monsieur J. Moens.

Crotons I have seen much better shown in England.

In the large annex beautiful color-effects were produced by masses of Azalea mollis, Rhododendrons shown in fine variety by Monsieur Pynaert, Azalea Indica, Clivia miniata varieties, etc. One of the most successful efforts in the way of plant-cultivation I have ever seen were the Oranges, Citrus Sinensis, from Monsieur Gulinck and Monsieur Alexis Dallière; the plants were fine bushes and pyramids, two to three feet high, laden with well-colored fruits.

Kalmia latifolia, dense, compact bushes, covered with flowers, were exhibited in quantity; a more elegant pot-plant could scarcely be imagined than this as grown at Ghent.

The Sweet Bay, Laurus nobilis, is cultivated in some establishments near Ghent and elsewhere in Belgium by the acre. They are grown in tubs as round-headed bushes on stems or as pyramids, and as specimens showing great skill on the part of the grower, they leave nothing to be desired. During winter the plants must be housed; they require so long a time to attain a marketable size and so much care to bring them to such a state of perfection that they are much too valuable to risk outside during the winter.

Choisya ternata was well grown and flowered. Some specimens had hemispherical heads, on stems two feet high, covered with blossoms. Cytisus scoparius, var. Andreanus, was also exhibited, grown in a similar way.

Diervilla (or Weigela), Eva Ratke, is a handsome variety, with deep red flowers; it was finely exhibited by Monsieur Pynaert, and will doubtless be cultivated by all who love hardy shrubs.

At Laeken, a bronzy yellow Tea Rose, William Morley, is grown under glass for cutting, and is preferred to Maréchal Niel, as it is not so liable to canker as that variety. Standard hybrid perpetual Roses and dwarf Moss Roses were largely grown in pots and well done. In a bed in one of the large conservatories a fine mass of Strelitzia Reginæ was in flower; it was planted out; the temperature in winter was kept up to fifteen or sixteen degrees centigrade (say sixty degrees Fahrenheit). Among other striking plants planted out at Laeken are Clavijas, Bromeliads, Chamærops stauracantha—a remarkably fine specimen—Kentia Lindeni, and other rare Palms. Brunfelsias, in fine flower, produced beautiful effects as bushes planted out.

Large plants of Vanda tricolor, etc., grown elsewhere and brought into the large warm conservatory to flower, were models of good cultivation. A number of small bushes—not a foot high, in six-inch pots—of Medinilla magnifica bore as many as half a dozen fine inflorescences; these must have been raised from large cuttings taken from old plants after growth had been made and bloom-buds more or less formed. In any case the Medinillas were a triumph of gardening skill.

One of the great features in the spring months at Laeken is the great extent of corridor connecting the different groups of houses with the palace and with each other. There are about 1,200 yards of corridor, and in mid-April it was a blaze of flower. Tropæolums, Ivy-leaved and Zonal Pelargoniums, Abutilon Megapotamicum (A. vexillarium), which was also used with considerable effect as a basket-plant, Passion Flowers, Heliotropes, Jasmines, the true Acacia riceana, Rhodochiton volubile, Dolichos, Bignonias and other plants being trained up the side and roofs.

Cultural Department.

Flowering Shrubs in Mid-August.

IN the middle of August shrubby plants seem less interesting than at almost any other time in the growing season. The flowering period is past with most of them, and showy ripe fruits or bright autumn colors of foliage are not yet common. But a group of shrubs may be formed which will make a very satisfactory show of bloom at this season of the year.

Besides some of the large-flowered Clematis which may continue to flower, there are one or two of the tubular-flowered, half-shrubby species which are highly interesting and satisfactory. Clematis Davidiana is herbaceous, but is very hardy. It is in its best flowering now, and with it is another plant, received from the Jardin des Plantes, at Paris, under the name of C. stans, which has light lavender-blue flowers. This name may not be the true one, as there is another and different plant known by the same name. Its blossoms are much paler in color, or white, and they do not appear until later in the season. One or two other so-called species of Clematis also blossom much later. The two species in blossom now have a sweet and delicate fragrance.

Hypericums, or Saint Johnsworts, are also interesting for their flowers, although the best blossoms of some kinds are passed. H. calycinum, H. hircinum, H. multiflorum and H. prolificum have a good show of flowers, and so have the smaller-flowered and comparatively newly introduced species, H. densiflorum and H. galioides. The latter has an abundance of narrow graceful foliage on slender branches.

The Altheas, or different garden varieties of Hibiscus Syriacus, are generally beginning to be showy with flowers in this latitude. The best flowers of the rarer Stuartias are past, although a few of their blossoms may yet be found. One of the very last of our common native shrubby plants to flower is the so-called Dwarf Sumach, Rhus copallina, which just now attracts swarms of insects. The panicles of flowers are of a greenish yellow color, and not showy, but the bloom gives out a pleasant sweet fragrance. The larger-growing Japanese plant, which is sold in nurseries under the name of R. Osbeckii, is showy with bloom at the same time, but the odor of the blossoms is not so agreeable. The only Spiræas which continue to make any kind of a show of bloom are all American. The Hardhack, or Steeple-bush, Spiræa tomentosa, has the best and latest bloom, while a good many flowering clusters are also found on the western S. Douglasii, and a few scattering clusters on S. salicifolia, the latter a native of Europe as well as of this country. A few belated clusters of flowers also occur on some of the forms of S. Japonica. The only showy Raspberry still in bloom is the purple Rubus odoratus, whose blossoms are becoming scarce. But the yellow, shrubby Potentilla fruticosa is still quite conspicuous in its inflorescence.

Our native Rosa Carolina is not yet fully past its natural time of flowering, and the little Rosa foliolosa is still bearing a few straggling specimens of its pretty white flowers. These two species are among the latest producers of blossoms in their natural season, but the Japanese Rosa rugosa, both red and white forms, commonly bears a few blossoms out of their proper season. Of course, the now common Hydrangea paniculata

grandiflora excels any other species in its genus throughout the remainder of the summer and autumn, but there is no other ornamental species blooming now which meets all our requirements as to perfect hardiness and in other respects.

The common Ling, or Heath, Calluna vulgaris, is altogether the most satisfactory and the hardiest. It can be grown in any peaty soil with a mixture of sand in it, loves plenty of moisture, though not a surfeit of it, and in our severe winters needs a

Fig. 55.—A bunch of Meadow Flowers.—See page 332.

The Sorrel-tree, Oxydendrum arboreum, at this season is a pretty object, with its long, one-sided, horizontal terminal open panicles of white flowers. In the same family there are the Heaths, several of which are now in their most attractive and beautiful condition.

little protection. Through selection we can now have several desirable forms in our gardens, among them being the double and the white. The Cornish Heath, Erica vagans, also proves satisfactory here, and this is its best flowering season. The slender Dabœcia polifolia also flowers freely at this time.

No garden is complete without the sweet Pepper-bush, or Clethra alnifolia, with its numerous erect spikes of fragrant white flowers. It is much to be preferred to the more southern Clethra acuminata, which also shows its best inflorescence about mid-August, although both species may continue flowering into September.

The Button-bush, Cephalanthus occidentalis, still flowers freely, though it is not generally considered an ornamental plant; and, among climbing flowering shrubs, there are none which at this season give such satisfaction as the Trumpet Creeper, Tecoma radicans, and Hall's Honeysuckle.

Arnold Arboretum. *J. G. Jack.*

Summer Treatment of Carnations.

IF we plant our Carnations in the open field in rich loamy soil, and about the same culture as is given garden crops by first-class market-gardeners, nipping out the flower-shoots as they break into bud, up to, say, August 1st, we may reasonably expect to produce good plants for lifting by August 25th. There is, however, a marked difference between carefully grown and carelessly grown field-plants. The summer treatment of Carnations really commences with the first pinching back, which we deem the most important of all, for the condition in which the plant is left by the first pinching determines its condition when it comes into flower. With most varieties our method is to pinch pretty well back at the first pinching, leaving the leader to grow well up and to show signs of bud-formation before cutting it out. We then cut it out well down, leaving four to five, and sometimes six to eight, strong base-shoots, which should start up free from the ground, so as to enable us to work close around the plant without bruising the under sides of the branches in weeding and hoeing. These side branches are again left to grow to nearly the bud-forming state, and are again cut back, leaving four to eight strong base-shoots on each branch.

This should be the last pinching back, since by starting our plants into an even growth now, allowing the new shoots to break well into growth and commence to elongate, and then lifting with as little check as possible, we can grow larger, longer-stemmed and more perfect flowers than when the plant has been subjected to three or four or more pinchings. We believe that errors in pinching back lie in both directions, and that too close pinching, as well as pinching too high up, is not as satisfactory as the medium-close plan. In some varieties, where the tendency is to grow too rank and dense at the base, we find it advantageous to break or cut out the weaker shoots, leaving the entire strength and growth to five or six of the strongest. By doing this we gain in size of flowers, strength and length of stem, and also in earliness of blooming.

In setting plants in the open ground we prefer not to set out before May 1st, and not later than May 25th. On Long Island, April-set plants, as well as those set out in June, have not given as good results as those planted in May. Our plants are set ten inches apart, in rows which are three feet apart, to admit of horse-cultivation. We commence cultivating as soon as the plants have struck, and run the cultivator through after each rain, or in dry spells as soon as weeds start, and the plants are hoed as often as weeds show or the ground needs stirring. In hoeing we do not stir the ground more than an inch deep at first, gradually reducing the depth of hoe-cultivation as the plants advance in growth. In cultivating with the horse we use an adjustable Planet, Jr., machine, reducing the width of the cultivator at each working, so that at the last only eighteen inches of the centre between the rows is horse-hoed, the remainder being left for the hand-hoe. The entire surface soil, for half an inch deep, should be kept loose and free from weeds, but the under soil, especially near the plants, should remain undisturbed.

The insects that are liable to trouble us in the field are cut worms, thrips, green fly and red spider. A solution of Paris green, sprayed on the plants with a knapsack sprayer, twice a month from the beginning will tend to keep cut worms and green fly, and even thrips, from getting an injurious foothold. The solution recommended is a teaspoonful of Paris green to a knapsack full of water.

With red spider the case is different, especially in extreme dry seasons, for this little pest seems as near iron-clad as any insect we have. Paris green does not seem to affect it. It does not like whale-oil soap, but thrives even in the face of that compound. Concentrated lye in a solution will kill it when the spider is young, but the old ones don't mind that very much. Constant forcible syringing seems to be the only effectual remedy, and in cases where the spider has got a firm foothold even that will fail. Our advice would be, if you have a variety thoroughly infested with red spider, to carefully gather up all the plants, transport to a safe distance and burn them up and syringe the adjoining rows with a solution of whale-oil soap or concentrated lye. If you have any spare pipe, lay pipes through your Carnation field and connect up to your pumping-engine or tank and spray your plants very forcibly with a fine spray.

Now is the time to commence fighting rust, spot or other fungal diseases. You may use an ounce of sulphide of potassium to ten gallons of water, or two or three ounces of concentrated lye or the Bordeaux mixture half-strength, or the ammoniacal solution of carbonate of copper. A knapsack sprayer is necessary to properly apply the fungicides, and the plants should be sprayed at least once a month. During August, and up to planting in and ever after, watch for the first sign of rust and destroy by burning every infected plant. Rust is like the cholera—you can keep it out by vigilance and thorough preventive measures, but once the germs are established in your stock you will find them very difficult to eradicate.

Perhaps some growers will exclaim, "Oh, pshaw! that is too much bother and labor to waste on growing Carnations. I get lots of flowers any way." Well, that is true, if you are growing for numbers of flowers regardless of size, price received and quality; but there are some florists who think their success is measured by their net cash returns rather than by a large cut of flowers sold at barely living prices.—*C. W. Ward, in Florists' Exchange.*

Notes on Begonias.

BEGONIA SEMPERFLORENS is rapidly coming to the front again, after some neglect, owing to several new breaks produced by the French florists. The typical plants are highly useful, as they have an abundance of bright glossy leaves and produce attractive flowers in abundance during the greater part of the year, most freely in summer and in autumn. The plants are rapidly propagated by cuttings, making it possible to secure a sufficient stock of desired colors for bedding, or they may be rapidly grown from seeds, which are produced in great quantities. Plants with white, pink and various shades of red flowers have long been grown, but the new strains are departures in the way of modifications of foliage-coloring. B. semperflorens atropurpurea (B. Vernon) has already been mentioned as an attractive bedding plant, with bright dark red flowers and leaves, which, in the open, take on ruddy hues. B. semperflorens foliis aureis, the golden-leaved Begonia, is the more recent introduction of Messieurs Vilmorin, and is a fitting companion of B. Vernon. The leaves of this variety are light greenish golden in color, pure and attractive in tone; the plants make capital bedders, as the sun does not dull or burn their leaves. The flowers are a delicate rose-color, with white centres. A fair proportion come true from seed, but for effective bedding selection would be necessary. For popular bedding plants they are far ahead of any hybrid tuberous Begonias, being vigorous in growth, subject to no blight; they are not scorched in the hottest sun, and in all weathers bear a profusion of bright flowers. They require no staking, and only that minimum of care which is so comfortable to the cultivator.

In spite of the occasional person who still holds that tuberous Begonias are fine bedding plants, the fact remains that they do not make any headway in that direction, for the simple reason that the hybrids and the species from which they are derived are not adapted to the exigencies of an American summer. They require special care, such as few people are prepared to give to bedding plants, to make them at all successful in the open, and even then are only a moderate success in some seasons. The first year that I grew them in any quantity we had a mild damp summer, and I believe I remarked after that season that tuberous Begonias were fine bedding plants, a conclusion which, after further experience, has been considerably modified. I now grow tuberous Begonias under glass, with slight shading, and they are kept as cool as possible. My experience is not different from that of others. Visiting a well-conducted nursery this spring, I found a large piece of ground being planted with tuberous Begonias, which seemed in excellent condition. The plot had a fine southern exposure, and this experiment seemed intended to produce a sensation, as a carriage-road ran in front of the bed. The plants disappeared, however, weeks ago, and the cultivation of tuberous Begonias in the sun has been given up by this firm. An object-lesson such as this overthrows a great deal of theory.

Elizabeth, N. J. *J. N. Gerard.*

Rudbeckia purpurea—Mr. Watson does not overpraise this plant when he says, "It is one of the stateliest and most effective of the many noble composites which have been introduced from America." I have grown it for years, and among a large collection of hardy perennial herbaceous plants I consider it one of the finest and most striking. In growth it is vigorous and free, and it produces a profusion of flowers which last for a long time. It is not particular as to soil, though it likes a strong, rich one, Here is another instance of one of our most beautiful native perennial plants quite neglected. Probably the reason why it is cultivated so little in England is found in the fact that it rarely perfects its seeds there, and can be increased only by division, and in this way but slowly, unlike most of our perennials. In this country we have no such excuse for neglecting it, as it seeds freely. It is fortunate that attention has been called to the stateliness and beauty of this plant, which so richly merits a more extended use in our gardens.

Washington, D. C. *John Saul.*

The Flower-garden.—Exceptionally dry weather since spring, and latterly almost a drought, has left the garden in an unsatisfactory condition, artificial watering in such a case, unless accompanied by careful cultivation, being of but slight service. Annuals were never in worse condition with me, and the self-sown hardy annuals are about the only ones which have made much progress. In the case of hardy annuals the results are never entirely satisfactory unless the seed is sown in the fall. Fall sowings will often produce plants which will astonish those not familar with the results. As an instance, a good plant of Coreopsis Drummondii will cover a space three feet in diameter and have stems an inch or more in diameter. New annuals of any value are rather rare, most of those tried this season being botanical curiosities. Of those in flower the most attractive at present is Ipomœa (mina) sanguinea, a very graceful vine with small deeply cut five-lobed leaves and tubular flowers with a spreading undivided corolla of a peculiar dull cinnabar-red. The flowers are numerous and handsome; like others of the family, they are fugacious.

Elizabeth, N. J. *J. N. G.*

Single Pæonies.—The illustrated article in GARDEN AND FOREST, p. 305, on the single White Pæony, calls to mind the fact that a large percentage of seedlings come single. The seeds take nearly a year to germinate, and some will come up only after two years. Some seedlings, now three years old, bloomed here last spring, and many were fine single varieties. Every year hundreds of seedlings come up in a large bed of Pæonies here; and I presume they germinate as freely elsewhere, but since they are not very conspicuous objects in the borders they are liable to be hoed up, and, therefore, should be looked for. Persons fond of single Pæonies might make quite a collection by simply taking care of the seedlings which yearly come up in the borders.

Wellesley, Mass. *T. D. H.*

Correspondence.

The White Grub in Lawns.

To the Editor of GARDEN AND FOREST:

Sir,—Can you tell me what is the best thing to do with a lawn of large extent which is infested with the white grub? Will plowing it up thoroughly and exposing it through the winter kill the grubs? The white grub is so serious an evil in Newport this year that its destruction has become a question of great moment. Is the English lawn-seed better than the American?

Newport, R. I. *E. B. A.*

[The white grub, the larva of the May-bug or Dor-bug, Phyllophaga quercina, is one of our most serious insect pests; it is dirty white, with a yellowish orange head, and when fully grown is sometimes as thick as the little finger and disgusting in appearance. It is particularly destructive to Grasses, Strawberries, young nursery stock and other plants with thin delicate roots. Working under ground, it is impossible to detect its ravages until their effects appear in the death of the injured plants. The larvæ remain three years in the ground, increasing in size from year to year, and are only large enough in their third and last season to be really destructive. There are always more or less of them in cultivated ground, but it is only at irregular intervals that they appear here in sufficient numbers to be seriously destructive. When a season in which they abound, like the present one, happens to be exceptionally dry, the damage they inflict is very great, as the roots of Grasses and other plants cannot grow in dry soil as rapidly as the grubs devour them, and the plants are, therefore, unable to recuperate. If their presence under a lawn can be detected by the browning of the grass before it is killed, the sod can be raised, and the grubs, which will be found within a few inches of the surface, killed; the sod can then be reset. The grubs are sometimes killed by pounding the surface of the sod with heavy wooden mauls, but this is slow work, and only partially effective. If the grass is killed there is nothing to do but to strip off the sod, which will be found entirely detached from the soil, kill the grubs, and then re-seed the ground. Exposing the ground during the winter, as our correspondent suggests, will not be necessary; the grubs big enough to do serious mischief are in their last season. This autumn they will descend deep into the ground out of the reach of frosts and emerge early in the following spring in the shape of beetles. The only way to fight them successfully is in this stage of their existence, and by destroying the beetles prevent the damage which three years later their offspring would inflict. In the very early morning the beetles, which are then inert, may be shaken down from the branches of trees into cloths and destroyed; or they can be caught during the night by suspending a lantern over a tub of water placed in the neighborhood of trees or shrubbery. The clumsy beetles, attracted by the light, fly to it, and striking heavily against the glass of the lantern fall to the water. A little kerosene oil poured on the surface deprives them of all chance of escape. In France, where these beetles (Hantons) are particularly destructive, various lanterns have been invented for this purpose, but an ordinary stable lantern hung over a wash-tub will answer the purpose. The more brilliant the light, however, the greater the number of beetles it will attract. As the grubs are so abundant this year in Newport there will be a large number of beetles there next spring, and an attempt should be made to destroy them. Concerted effort on the part of the land-owners ought to reduce the number materially in an isolated community like that on the island of Rhode Island, although it will not be possible to destroy them all.

In our climate Kentucky Blue Grass and Rhode Island Bent Grass make a better lawn than any of the foreign Grasses.—ED.]

Dutch Bulbs in America.

To the Editor of GARDEN AND FOREST:

Sir,—I judge by Professor Massey's rejoinder to my remarks concerning the cultivation of Dutch bulbs in America, that he did not quite see what I thought stood in the way of the prosecution of that business here, for he simply asserts that North Carolina has a great deal of soil suitable for these bulbs, which I fully believe, and that a Dutch grower is going to examine for himself. I spoke of the probable quality of the flowers produced by southern-grown bulbs, and in that connection named southern Tuberoses, Bermudian Lilies and Italian Lilium candidums. Professor Massey's reply asserts the superiority of North Carolina Tuberoses, which I do not deny, as I have very little knowledge of the plant, but, whether right or wrong, there is some prejudice in favor of the northern-grown product; if it is mistaken it will wear away in time, but at present it exists.

Professor Massey states that 100,000 undersized Lilium candidum bulbs grew to large dimensions in a year in North Carolina, as they would have done with proper treatment in almost any state of the Union, but he fails to meet the point which I raised about them, inasmuch as he does not say whether the flowers were of such substance as those we see in old gardens all through the north. L. candidum is hardly a "Dutch" bulb, but, passing over that point, let me say that it can be purchased in Italy at eight dollars per thousand, and if the flowers of these bulbs are not influenced unfavorably by the climate, that will be the price which can be obtained for them, plus the trifling expense of importation. One year more of cultivation in Italy or America would make them larger, no doubt, and then the Italian price would be fifty lire (ten dollars)

a thousand. I do not expect or desire to see labor so low-priced in America that a man will be content to grow these Lilies several years, from the scale to the full-sized bulb, for one cent.

As for the greater amount of sunshine in the south, there is very little difference between North Carolina and Massachusetts, but that difference, between the vernal and the autumnal equinoxes, is in favor of the northern locality. There is enough of sunshine and heat, too, in any part of the north for the perfected growth of Dutch bulbs proper, Hyacinths, Crocuses, Tulips and Narcissi, all of which have run their yearly course above ground before July comes in. As for the Dutch grower, of whom frequent mention has been made in several papers lately, if he enters upon the business here and continues in it for a term of years I shall be surprised, but I shall also be as much pleased as any one at the successful introduction of a new industry, and will acknowledge my mistake. At present, however, since I agree with Professor Massey that the business will be carried on where it can be done most advantageously, I believe that the Dutch and French growers will continue business in their own countries, undisturbed by American competition, and that "failure and loss await those who shall go into the Dutch bulb business in this country."

Canton, Mass. *W. E. Endicott.*

Periodical Literature.

A recent issue of the Kew *Bulletin of Miscellaneous Information* contains an interesting account of the Chinese white wax industry, one of the most curious of all human industries.

The wax insect is bred in certain districts of central China upon a species of Privet, probably Ligustrum Japonicum; and as the Chinese believe that the wax cannot be produced in the districts where the insect is propagated, and, conversely, that the reproduction of the insects cannot take place in regions which are favorable to the production of wax, after the eggs are hatched they are gathered and carried several hundred miles into another province, where they are deposited on the branches of an Ash-tree, which is believed to be Fraxinus Chinensis. Here they are hatched, grow and deposit their wax, which is collected by cutting off the branches of the Ash-trees, which are carefully cultivated for the purpose, and then boiling them. The method is thus described: "The mother gall being placed upon a suitable tree, the young brood march out at a good round pace and ascend the branches, the red females leading the way; after a period of desultory wandering they reach the leaves, on which they seem to feed, but the quantity they consume is imperceptible, and the leaves remain, to all appearance, uninjured. In about ten days they return to the thin upper twigs, where, according to the natives, the males begin to excrete wax, and the females to form the galls either amid the wax or apart from it. The deposit of wax gradually increases during a hundred days, from the date when the galls were attached to the tree; the twigs are then almost entirely coated with a layer a third of an inch or less in thickness. The whole process extends from the middle of May to the end of August. While still on the tree the deposit is a kind of dense greasy fluff, and looks very much like sulphate of quinine. The twigs, with their coating, are cut into convenient lengths and put into a pot with a little water. After the boiling-point is reached the fire is removed, and when ebullition ceases the poorer quality of wax, with the hard parts of the insects and other impurities, sink to the bottom. The clear wax is skimmed from the surface and poured into a mold, where it solidifies into the wax-cakes of commerce." A few of the galls are, of course, retained in the region where the eggs are hatched to ensure their reproduction.

The operation of transporting the eggs is a delicate one, as the interval between the milk and the hatching state is short, and the young insects are liable to escape; hence the journey is made with all possible dispatch. The carriers cannot march while the sun is high, for the heat would hatch the eggs. The stages must be made by night, and every one is obliged to carry a lantern. The whole body of carriers sets out within the space of a day or two, and as the number is about fifteen thousand, all hastening by the light of their lanterns over some of the wildest passes in the world, each trying to outstrip his fellow and to get first to the ferry or inn, it is easy to imagine that this march of insect-carriers is like the headlong flight of an army.

The export of white wax from the interior provinces has shown a great decline in recent years, and the industry is thought to be a decaying one, petroleum replacing in China the vegetable waxes upon which the Celestials entirely depended up to recent years. The insect which produces the white wax is Coccus Pela.

The first account of this remarkable industry was published as early as 1655 in Martini's *Atlas Sinensis*. The best account, perhaps, is that of the Jesuit, Père Rathones, who in 1880 published in Shanghai his *Etude sur le Coccus Péla*. An interesting account of it, too, will be found in Hosie's *Three Years in Western China*.

The Columbian Exposition.

The Fruit Curtains.

LYING in the rear of the plant curtains, which were described last week, are the two wings devoted to the pomological displays. These are much like the plant wings in style, except that less glass is used in the sides and roofs, and the floors are laid with boards. Each of them is forty-six feet wide by 346 feet long. Entering the short passage leading west from the great dome, one finds the fruit displays extending away upon either hand. The early displays in these wings were comprised largely of apples from cold storage, citrous fruits from California and Florida, and miscellaneous collections of fruits in preservative liquids. During June and July the berries became attractive features of the displays of a few states, especially of Illinois, New York, Wisconsin and New Jersey. Now, at the middle of August, the new tree fruits of the season are introducing fresh interests, and many of the tables are assuming a novel appearance.

The first thing which attracts one's attention upon entering the south curtain from the north is the interesting remnant of the New South Wales collection. This has now dwindled to a few plates of apples and a number of lemons, but these fruits have been on exhibition many weeks after having made a journey of nearly two months from Australia. At the left of this space is the collection of Italian lemons and oranges, in very much the same condition as when reported upon five weeks ago. A central table, facing the entrance, is devoted to fruits from Kentucky, comprising a considerable collection of autumn pears and apples, peaches, plums and grapes. California occupies a central table to the left of this and a wall table still to the west. The plates of citrous fruits have now largely disappeared from the California collections, and their places are taken by immense plums, pears, peaches, nectarines and grapes. The Susquehanna peach, which seems to meet with indifferent success in the east, is conspicuous in this collection. The great monument of California oranges is still in good condition, although it has lost some of its freshness; and the same may be said of the still remarkable citrous display California makes at the south end of this curtain. Against the east wall Maine still holds its space, although the exhibit has now dwindled to a few preserved fruits and jellies. About half-way down the hall Iowa has a long table heavily loaded with new and old apples, with a sprinkling of native plums. Illinois, appropriately, occupies the largest space of any exhibitor in the hall. It shows great quantities of apples, both old and new, peaches, pears and grapes. They are disposed on three long tables with mirror-backed shelves, with blackberries, crabs, plums and some other fruits in a cold-storage case. Opposite Illinois, Minnesota has one of the best storage-case displays in the building. Michigan, which has been very poorly represented, is now beginning to fill its dreary shelves with a few early peaches and apples, and there is promise of a representative display later on. New Jersey has a good collection of apples and pears, and Wisconsin has a small and brilliant display of new apples, with the last of the blackberry show still on the shelves. The Lubsk Queen, an apple in this exhibit, is the most remarkable combination of brilliant pink and white and primrose color of which the eye can conceive. New York is holding its place as one of the most varied and carefully made collections of fruits in the building, although the season's fruits have not yet appeared in great quantity. A large and interesting remnant of apples from the cold-storage fire is still on the shelves.

Entering the north curtain from the south one comes first upon the large collections of the Canadian provinces, which are just now beginning to feel the effect of the first early apples and peaches. New Mexico follows with a small lot of bottled fruits, beyond which is a wretched collection of wax fruits and vegetables from Louisiana. Montana and South Dakota show bottled fruits. Arkansas has a long table devoted to an excellent display of apples and peaches. Idaho shows new peaches, apples and plums, but the larger part of its display, and the entire display of Washington, are yet comprised in the bottled products. In the Georgia section, Mr. A. F. Rice, of Griswoldville, shows a lot of superb grapes, a

new variety, seedling of Eumelan, resembling Concord in color, but very sweet. Missouri shows by far the finest lot of peaches, the chief variety being the now famous Elberta. This state also displays new apples and pears, native plums and grapes in variety. Colorado, which heretofore has confined itself almost wholly to bottled and wax fruits, now has fresh peaches, wild goose plums and a long table of new apples. Oregon is receiving new grapes, pears, apples and plums. The great space at the north end of the curtain, occupied by Florida earlier in the season, is now being rebuilt, and Nebraska is spreading a very large and attractive display of apples, peaches, grapes and native plums; and Oregon has secured some of the space for a show of stone-fruits, including the Early Red nectarine and the Hungarian prune, the latter showing many double specimens.

It is yet too early to judge of the comparative merits of even the early displays of new fruits, but it is clear that Illinois, Oregon, New York, Missouri, Arkansas, Ontario, Iowa, New Jersey, Nebraska and Wisconsin are to make strong exhibits. California seems inclined to rest upon its citrous exhibits, and many states, even in the east, which are capable of making important shows, have so far made no effort. It is doubtful if the quality of even the opening displays of new tree-fruits is beyond criticism, but an interesting autumnal competition seems to be assured.

Chicago, Ill. *L. H. Bailey.*

Meetings of Societies.

Convention of the Society of American Florists.

THE annual meeting of this association at St. Louis was not so largely attended as some of its predecessors, but it was unusually interesting and important. According to the report of Secretary Stewart, the membership last year reached 829, of which 174 were new accessions, and there is little doubt that the association will number a thousand strong within a comparatively short time. The convention opened with the usual address of welcome by the Mayor of the city, and President W. R. Smith, of the Botanical Gardens in Washington, read an elaborate and instructive address covering a wide range of topics. In the discussion of the address, the point which excited most attention was the advice to encourage the production of home-grown seeds, bulbs and plants, so as to give to American industry the two million dollars which are annually sent abroad for these articles. As a proof of our capacity in this matter Mr. Smith cited the example of California, which was already producing large amounts of seeds and bulbs, and of Long Island, where he had lately seen on one estate ninety acres of Gladiolus. Indeed, Gladiolus-bulbs had now become an article of export, instead of being imported, as they were ten years ago, while the price has been greatly reduced. The cultivation of Tuberose-bulbs and similar ventures in some of the southern states, for the home and foreign trade, was also cited; and it was urged that Roman Hyacinths, and perhaps many other bulbs, seeds and plants, could be grown successfully for market on this side of the Atlantic.

The papers read on various subjects were of high order. We have already made quotations from some of them, and we shall quote from others from time to time such portions as may be of permanent interest. The first paper was an admirable one by Mr. C. H. Allen, on Carnations, and as Mr. Allen is one of the most successful growers in the country, the terse account of his own experience had singular value. The other important papers were by Robert Kift, of Philadelphia, on the "Benefits of Closer Co-operation between Growers and Dealers as regards Regulating Prices"; one by Mr. J. C. Watson, of Philadelphia, entitled "How Can We Increase the Love of Flowers among the People of this Country?" and one by Mr. Elmer D. Smith, on "Bench-grown Chrysanthemums for Exhibition Purposes." At the second day's session Mr. R. F. Tesson, of St. Louis, discussed with great fullness of detail and ample knowledge "The Science and Facts of Successful Rose-growing." The essay drew forth much commendation and discussion. In the evening a paper by Mr. W. G. Bertermann, of Indianapolis, on "Horticultural Exhibitions and How to Make Them Successful," was read, and this was followed by an essay by Mr. James Gurney, headgardener of the Missouri Botanical Gardens, on "Old and Neglected Plants which are worthy of More General Use in Outdoor Decoration." The essay was characterized by a sincere and catholic love of nature, a fact which was alluded to in the discussion of the paper by Mr. J. C. Vaughan, who added in the same strain that if florists could acquire a little more of that love for Apple-blossoms and Arbutus, the love of simple nature, and could teach it to some of their customers, it would much benefit the trade, which he sometimes feared was too strictly commercial. Mr. Robert Craig, of Philadelphia, read a brief but practical paper on "The Best Means of Increasing the Love of Flowers," among which means he gave a prominent place to such societies as the Carnation Society, which had already done much, and the Chrysanthemum Society and the Rose Society, from which we ought to hope for much more. The concluding paper on "Labor-saving Devices," by Mr. Patrick O'Mara, was a resumé of the more important improvements in practice which have been adopted by the trade within recent years.

The report of the Committee on Nomenclature, of which Professor Trelease is president, was important. It recommended, as the standard for naming species and varieties of ornamental plants, Nicholson's Dictionary, and that in cases where plants had been widely known under a name different from that used in the dictionary, the popular but discarded name should be added in parentheses until the public had become accustomed to the change. With respect to florists' names, it was advised that the trade should conform to the rules adopted by the American Pomological Society for fruits, and the Association of American Agricultural Colleges for vegetables, and that the society should publish every year in horticultural papers and elsewhere a list of synonyms used in the trade during the year; and, finally, the originators of new plants were urged to employ short, appropriate and neat vernacular names instead of misleading, long, high-sounding or vulgar names, and that the use of Latinized names should be confined exclusively to species and natural varieties.

The meeting was honored by the presence of several foreigners of distinction—among them Mr. George Nicholson, Curator of Kew Gardens; Professor Wittmack, of Berlin; M. Krelage, of Holland; M. Lemoine and others.

Mr. J. T. Anthony, of Chicago, was elected president for the ensuing year, Mr. Robert Kift, of Philadelphia, vice-president, and Atlantic City, New Jersey, was selected as the place for the next annual convention.

The Horticultural Congress at Chicago.

THAT part of the general scheme of congresses auxiliary to the Columbian Exposition which devoted itself to horticulture convened on the morning of Wednesday, August 16th, in the Memorial Art Palace, in Chicago. The congress was designed to represent the entire field of American horticulture, and it was held under the patronage of the four great national societies—The American Pomological Society, Society of American Florists, American Seed-trade Association and American Association of Nurserymen. The immediate charge of the congress fell to a local committee, of which J. C. Vaughan was chairman. A general session was held upon the morning of the 16th, and thereafter the business of the congress came before four separate sections representing the respective societies. The general convention attracted an audience of 150 persons, mostly of men distinguished in various horticultural professions. It was undoubtedly the most representative body of American horticulturists which the country has yet seen. Foreign horticulturists were few in number, but among them were Henri L. de Vilmorin, of Paris; Professor L. Wittmack, of Berlin, and J. Pedersen-Bjergaard, of Copenhagen, all of whom took an active part in the conventions. The first session introduced four general topics, each of which was the subject of a paper and some discussion. "Technical Horticultural Education" was introduced by Professor Trelease, of the Missouri Botanical Gardens, who was of the opinion that, save possibly in floriculture, the United States is not yet ready for technical horticultural schools. "Improvement and Care of Public Grounds," by William McMillan, Superintendent of the Buffalo Parks, introduced the whole subject of landscape-gardening, and provoked a discussion of the uses of color, in which the florists contended for a greater recognition of the importance of flower-pieces in landscape-design. Charles W. Garfield, of Michigan, spoke upon the "Relation of Experiment Stations to Commercial Horticulture," saying that the stations and the public have not yet come into perfect and productive sympathy with each other. "Horticultural Displays at Future World's Fairs" was most suggestively introduced by Dr. Wittmack. Amid the universal praise which Americans naturally bestow upon everything connected with the Fair, it was a refreshment to hear an impartial foreigner measure the features of our horticultural displays. While the distinguished guest, who is sent by the German Emperor to report upon the Exposition, is greatly impressed with the architectural and material splendors of the

Fair, he is disappointed in finding so little devoted to science and education in horticulture, such meagre exhibits in garden vegetables and nursery products, and the entire absence of seasonal displays of special fruits and other perishable products which were made a feature of international exhibitions, even so long ago as the Paris Exposition of 1867. He thinks that floral decorations about the various buildings should have been prominent, and suggests that in future fairs the exhibitors' plants be used for such decorative purposes. He also dislikes the single-judge system of awards. The Fair has introduced an admirable principle in the erecting of greenhouses for growing and caring for the plants of exhibitors, and if this feature is enlarged upon in future expositions it will greatly tend to make them widely cosmopolitan. Each nation should plant its building in a garden showing the national characteristics, as the Japanese have done here; and some future exposition should attempt to reconstruct some of the history and evolution of gardening.

Of the leading papers read, it is enough to say at present that the Seedsmen's session was devoted very largely to a discussion, led by an admirable paper by Monsieur Vilmorin, of the principles and methods of the origination of varieties; the Florists continued the consideration of the uses of color in landscape-gardening; while the Nurserymen and Pomologists attempted some review of the growth of their respective vocations. None of the sessions were well attended, although the interest was good and the papers were excellent. Owing to the many diverting attractions of the Exposition, horticulturists generally did not quickly comprehend the scope and needs of the congress, and it can scarcely be called a great success; yet the character of the men who were present, and the papers which were read, make the occasion a very important one, particularly in view of the fact that this is the first gathering in the country which has attempted to represent every branch of American horticulture.

Notes.

A correspondent writes that the fruit of a young Pear orchard near Pine City, Georgia, consisting of three acres, was recently sold on the trees for $475.

At the closing exercises of the Convention of American Florists a gold watch and chain were presented by the society to President Smith, and a silver drinking-service to ex-President Jordan.

The Trumpet-creepers, our native Tecoma radicans, which have been in bloom here for more than a month, and the Japanese T. grandiflora, which will continue to bloom for a month longer, are to be commended not only for their vigorous growth and bold flowers, but because they invariably attract humming-birds, which are as beautiful as any flower. These birds promptly appear at the opening of the first Tecoma flower, even though they have not been noticed before in the neighborhood, and, so long as the plant continues in bloom, there is not an hour of the day when there is not a bird hovering among the flowers.

In spite of the dry weather we observe that the Hybrid Noisette Roses, Coquette des Blanches and Coquette des Alpes, have been blooming when most other varieties show no signs of a flower. Mr. Ellwanger says that the origin of this class of Roses is uncertain, but they seem mostly to come from crosses between the Bourbon and Noisette Roses. The varieties mentioned, however, are less delicate than Madame Noman and Eliza Boelle, and they seem to have more of the hardiness of the Noisette parent. The freedom with which they bloom late in the season gives them an especial value, although their white full flowers, sometimes tinged with blush, make them desirable at any time.

The value of Sophora Japonica as an ornamental tree here is hardly appreciated. It is the only tree which produces flowers in this climate as late as the middle of August. It is very hardy, of good habit, free from the attacks of insects and fungal diseases, and the leaves are of a beautiful dark glossy green. The yellowish white pea-shaped flowers are produced in great terminal clusters, and well-established trees flower freely during two or three weeks. This Sophora is certainly one of the best of the medium-sized exotic trees which we can plant in the northern and middle states. Large specimens are not common in this country, although S. Japonica was one of the first of the eastern Asiatic trees introduced into European gardens, where it was sent by Thunberg, who found it cultivated in Japan more than a century ago, and who mistook it for a Japanese tree.

A private letter from Monsieur Naudin informs us that Fourcroya Roezlii is flowering in the garden of the Villa Thuret, at Antibes, for the first time. The plant is thirty-two years old, with a stem some eight feet high, as thick as a man's thigh, and crowned with an enormous tuft of glaucous unarmed leaves. The flowering kills the plant, absorbing the juices of the leaves, which, after the development of the enormous flower-cluster, hang inert. The panicle is terminal, nearly twenty-five feet tall, with numerous spreading branches which bear more than a thousand white flowers, succeeded by numerous hanging ovoid fruits the size of a small hen's-egg, and filled with flat black seeds. It also produces upon the branches of the panicle thousands of bulblets, in this way providing for its reproduction. This remarkable Mexican plant is sometimes known in gardens as Beschorneria Parmentieri; it also is sometimes called Roezlia regia, R. bulbifera, Yucca Parmentieri, Y. Toneliana and Y. argyrophylla.

The first volume of the *Dictionnaire Pratique d'Horticulture et de Jardinage* is completed with the sixteenth part, which has just reached us, the last entry being "Composé." This, it will be remembered, is a French edition of Nicholson's useful *Dictionary of Gardening*, considerably enlarged by the French editor, Monsieur Mottet, assisted by some of the principal botanists and horticulturists of France. Plants which have been described since the appearance of the original work are included in this edition, in which, too, the definition of botanical and horticultural terms has been amplified, as have many of the descriptions of genera and families. The addition of the names of the authors of genera and species increases the value of the work, which will be of invaluable assistance to every student of garden-plants and every intelligent gardener. The French edition is dedicated to Messrs. Vilmorin, Andrieux & Co., who have rendered the editor invaluable service, he tells us, in his serious undertaking.

The useful *Biographical Index of British and Irish Botanists*, including also many gardeners and others more or less directly interested in plants, compiled by James Britten and G. S. Bulger, and first published in the pages of the *Journal of Botany*, has now been issued in a handsome volume of a hundred and eighty-eight pages, by West, Newman & Company, of London. The following extract will give an idea of the nature of the information to be found in its pages: "Parry, Charles Christopher (1823-90), b. Admington, Worcestershire, 28 Aug., 1823; d. Davenport, Iowa, 20 Feb., 1890. Went to America, 1832. M. D. Botanical explorer and collector. On Mexican Boundary Survey, 1850; in Rocky Mountains, 1861. Botanist to Agric. Dept., Washington, 1869-71. *Chorizanthe*, 1884, 1889, and various bot. papers. Friend of Torrey and Gray. Herb. at Davenport Acad. Nat. Sciences. Jacks. 589; R. S. C. iv. 767; viii. 565; Garden and Forest, iii. 120; *Bull. Torrey Bot. Club*, March, 1890; *Western Naturalist*, June, 1890 (portr.) *Parryella*, Torr. & Gray."

The fruit-stores and the side-walk fruit-stands have never shown so great a variety of beautiful fruits as they now do. The California plums now principally offered are the Peach plum (the variety known as Prune pêche in France), a large brownish red fruit; the German prune, an oval, deep purple fruit; the Tragedy prune, a Pacific coast variety which has been in market ever since June, larger than the German prune and of a lighter color, and handsomest of all the fruit sold as the Grosse prune, but the true name of which is English Pond's Seedling. This is the largest prune in the market, of a beautiful violet-red, with a delicate bloom. It is rather coarse in flesh, but sweet. The Yellow Egg plum is next in size, being large and oval, of a light yellow color and a thin white bloom. The Columbia is a large plum with very rich, sweet orange-colored flesh, but is not attractive in the color of its skin, which is a dull reddish-brown with fawn-colored dots and copious bloom. The Green Gage is small and globular, with pale green flesh. It is juicy, exceedingly rich and of excellent flavor. The choicest of these plums sell at from twenty-five to thirty-five cents a dozen. California peaches are scarce, although dealers like to handle them because they last longer, even after a journey across the continent, than fruit from New Jersey. Crawford's Early and Mountain Rose, the best Delaware varieties in market, bring a dollar and a half a basket when of the first quality. Kieffer pears are now coming from the southern states, while the apples which bring the highest price are Gravensteins from the Hudson River valley. During the week large Japanese persimmons of a rich yellow color have appeared in abundance and sell readily for ten cents each. They come from Florida.